

# City of Surprise, Arizona

# Addendum No. 1 – Q&A December 21, 2015

Invitation for Bids (IFB):

Greenway Road – Litchfield to Bullard Roadway Improvements

COS16-006





Final Date for Questions: December 14, 2015; 4:00 p.m. Local Time

Bids Due: December 30, 2015; 4:00 p.m. Local Time at:

City of Surprise Procurement Office 16000 N. Civic Center Plaza Surprise, Arizona 85374

No.	Reference	Question/Response
1	C306	Bid Item #49 – 60" Diameter Sewer Manholes – The bid item quantity on Schedule of Values is shown as 14 Ea., there are 16 Ea. 60" Diameter Sewer Manholes shown on the plans. Is it possible that manholes #7A & 7B on Sheet C306 were not accounted for on the Schedule of Values? ? If they are to be new manholes can a rim elevation be provided for manhole 7B. Also, will this affect an updated bid schedule?
		City Response: Correct, see attached revised Schedule of Values, Bid Item #49 - 16 EA. MH 7B rim=1194.71'
2	IFB	The IFB mentions to submit an organization chart with the bid (page 9 of the project overview section). There are no instructions so we don't know if you mean this project's org chart, or the company org chart.
		City Response: The organizational chart that is required shall identify the employees that will be working specifically on this project.
3	APS1-9	Bid Item #77 – Street Light Sono Tube - Bid item quantity on Schedule of Values is shown as 20 Ea., there are 23 Ea. street lights shown on the APS plans. Should there be a sono tube installed for every street light shown on the APS plans?
		City Response: Correct, see attached revised Schedule of Values, Bid Item #77 - 23 EA



4	APS1-9	Bid Item #78 – Street Light Conduit - Bid item quantity on Schedule of Values is shown as 5341 LF., It appears as though some of the conduit shown on the APS plans is unaccounted for in this quantity. There are several sections on the plans that conduit quantity is not called out. (Sheet 3 Matchline 13+00 to S771212, Sheet 6 Matchline 43+00 to S771224, Sheet 8 S771513 to Top Matchline 61+00 & Bottom Matchline 61+00 to Tie in).  City Response: The quantity is called out in those locations on the APS plans, but they are labeled in regular font instead of bold like the other callouts. However, 5341 LF does not match the APS plans. See attached revised Schedule of Values, Bid Item #78 - 5261 LF, to match the APS plans.
5	C201-C211	Bid Item #39 – Concrete Encasement per MAG Det. 404-3, encasement called out shouldn't be required since potable water main is over effluent and there is over 2' of vertical separation.  City Response: The effluent line must be treated as a pressurized force main in MAG Det. 404-3. Therefore encasement is required for separation less than 6-ft, which
6	C202	applies to these locations.  Bid Item #39 - Quantity is shown as 80 Lf. on construction notes but there is only 40 Lf. of encasement shown on the plan.  City Response: Correct, see attached revised Schedule of Values, Bid Item #39 - 687
		LF
7	C206	There isn't an encasement shown for the 16" water line at Sta. 36+54. Quantity is shown as 40 Lf. on construction notes but there is 60 Lf. of encasement shown on the plans if they are all needed (80 Lf. if 16" effluent needs to be encase at Sta. 36+54).
		City Response: The waterline at Sta. 36+54 shall be revised to include a partial encasement (17LF) to protect the existing valve and tee. The correct quantity for this sheet is 77 LF. See attached revised Schedule of Values, Bid Item #39 - 687 LF
8	C209 & C211	Bid Item #39 - Quantity is shown as 70 LF on C209 and 80 LF on C211 but there is only 40 LF of encasement shown on each sheet.
		City Response: Correct, see attached revised Schedule of Values, Bid Item #39- 687 LF
9	C201 & C210	Bid Item #40 - Combination Air/Vacuum Release Valves – The bid item quantity on Schedule of Values is shown as 4 Ea. but there are only 2 Ea. called out on the plans. (Sheet C201 @ Sta. 12+22 & Sheet C210 @ Sta. 53+90).
		City Response: Correct, see attached revised Schedule of Values, Bid Item #40 - 2 EA
10	C203,C204 & C208	Bid Item #80 – Relocate Existing Blow off – Will the existing 8" PVC stubs have to be extended to relocate the blow offs or will the 2" copper pipe be extended?
		City Response: The 2" copper pipe will be extended.



11	Spec Item 9	We need to know where the millings are to be hauled, and do you want the millings from the asphalt removal as well as from the mil & overlay.
		City Response: Add following paragraph to Special Provision Item 9 - Mill and Overlay: The Contractor shall dispose of asphalt millings from the mill and overlay work as directed by the City at the water treatment facility just west of Bullard. Prior to disposal, Contractor shall submit a millings stockpile plan to the City for approval that illustrates stockpile footprint, height, and erosion control. Asphalt material from sawcut and removal sections will not be accepted and shall be removed and disposed of by the Contractor.
12	Schedule of Values	I see there are some connections on the alternate bid #42 that are also counted in bid item #44/45., the new hydrant. Are the connections w/ the tees for the hydrants suppose to be in the alternate bid item?
		City Response: See attached revised Schedule of Values. Item #42 for reclaimed bid alternate quantity is 1 each. Item #42 has also been added to the base bid for fire hydrant connections, 11 each.
13	C201-C212	Will "Field-Lok" gaskets be an acceptable joint restraint?
		City Response: Field-Lock gaskets are an acceptable joint restraint.
14	C201-C212	What pressure class DIP will be required on the 16" (CL250 or CL350)?
		City Response: The 16" DIP is pressure class CL250 per Special Provision item 35.
15	Spec Items 81-82 & LS1-6	Special provisions, pages 43 & 44 (Bid items 81-82) state that we are to till the surface to an 8" depth (bottom of page 44), while the plan notes on sheets 53-57 (Soil amendments – conditioners in Landscape Legend box) states that the tilling is to be 12". Also, if we are amending the soil to an 8" or 12" depth, why are we testing the soil from a 6' depth?(first paragraph on page 43).
		City Response: Revise Bid Item 81-82 and LS-16 - All areas to receive landscaping shall be receive soil amendments and be tilled to a depth of 8", removing material larger than 2". Soil should be tested to a depth of 6-inches
16	Spec Item 13 & 28	Is there a specific color required for the Rip Rap Rock or will an angular grayish rock be acceptable?
		City Response: Add line to Special Provision Items 13 & 28 - Rip Rap shall be Cinnamon Brown or approved equivalent color.
17	Spec Item 9 & 14	Is the D1/2" Asphalt required for the 2" Finish Course Rubberized or not? Item 9 (Mill & Overlay) calls for a Rubberized 2" Bituminous Pavement Overlay, but Item 14 (2" Type D ½") just calls for MAG 321 Asphalt. If the D1/2" is rubberized is it MAG or Phoenix Specs?
		Asphalt is not rubberized. Delete "rubberized" from Special Provision Item 9 - Mill and Overlay



18	APS1-9	Are we to provide street lights and junction boxes for street lights? If so, which bid item should we include them in?
		City Response: Per APS Sheet 1 - Items of Responsibility, APS will provide and install the street lights and cable. APS will provide the junction boxes, ground rods, flat straps, sono tubes, conduit plugs, and electronic markers for the Contractor to install. The Contractor's installation of these materials supplied by APS shall be included in Bid Item 77 - Street Light Sono Tube
19	Schedule of Values	Will there be a bid item added for connecting to the existing waterlines as stated in the special provisions?
		City Response: See attached revised Schedule of Values. Item #42 for reclaimed bid alternate quantity is 1 each. Item #42 has also been added to the base bid for fire hydrant connections, 11 each.
20	G003	The pipeline installation notes state backfill per detail on sheet 3. This detail shows installing 2' of ABC below asphalt. Will this apply in areas to be fully reconstructed?
		City Response: Areas of fully constructed or reconstructed pavement sections will not require 2' of ABC below asphalt. The top of trench shall match Detail 4, Sheet G003 for areas of fully constructed or reconstructed pavement.
21	C306	There is one section of sewer pipe that will be placed perpendicular to the roadway under the mill and overlay area(Sta 105+18). What type of backfill will be required here?
		City Response: Trenches within mill and overlay areas shall match Detail 3, G003.
22	C101 & C106	Supplemental Information
		Keynote #32 at approx. Sta 11+05 and Sta 35+75 - CenturyLink will remove communication box/pedestal and place utility marker. Contractor to protect utility marker/lines in place and remove any abandoned conduit required for grading.
23	Schedule of Values	Supplemental Information
		See revised Schedule of Values. The subtotal for the base bid and alternate bid have been modified to include the Bid Items #'s that will be included for each subtotal.
24	C101 & C112	Supplemental Information
		The following locations will have new sidewalk surrounding the existing signal poles at a elevation higher than the concrete foundation but lower than the base plate. The contractor shall form and pour the new sidewalk up to the signal pole foundation and fill the space from the outside of the foundation to the base plate with grout to match the new sidewalk elevation. Sta 9+27-NW Corner, Sta 10+49-NE Corner, Sta 62+26-SW Corner, Sta 63+26-NE Corner. Contractor shall include grout work in Bid Item 106 - Misc. No separate pay item will be provided for this grout work.



Spec Items 10 & 12	Supplemental Information
	See attached revised Schedule of Values and Special Provision Items 10 & 12. The base bid shall include disposal of all excess spoils. A deductive bid alternate shall be provided to stockpile excess soil spoils within a Temporary Construction Easement directly north of the alignment.
SL6	Supplemental Information
	Remove street light at Sta 61+84.2. The correct number of street lights is 23.
Spec Items 84-89	Supplemental Information
	See attached revised Bid Items 84-98 Irrigation System Components.
Spec Item 99-102	Supplemental Information
	See attached revised Bid Items 99-102 Plant Materials.
Spec Item 103-104	Supplemental Information
	Change the color of pit run rock to match D.G. color. D.G. and pit run rock shall be Cinnamon Brown or approval equal.
Schedule of Values	Supplemental Information
	Contractor to include a separate line item for tax. See attached revised Schedule of Values.
Schedule of Values	Supplemental Information
	See attached revised Schedule of Values. A bid alternate shall be included to install pavers instead of landscaping in the median noses where nose width is less than 4-ft.
C205,C211, C212,C305, C306,C311	Supplemental Information
	Add Keynote 64 "Utility Crossing" at the following locations: C205 Sta 28+50-new elect. Conduit, C211 Sta 60+50-new elect. Conduit, C212 Sta 61+20 new Swr, C305 Sta 96+50 new elect. Conduit, C306 Sta 105+18 ex. Water, C311 Sta 128+50 new elect. Conduit
Schedule of Values	Supplemental Information
	Move Bid Item 80 "Relocate Existing Blow Off" from the bid alternate to the base bid under the Water section. See attached revised Schedule of Values
C210	Supplemental Information
	Change Keynote at Sta 53+73 from "68" to "58" - Relocate existing blow off. See attached revised Schedule of Values Bid Item 80, 4 each.
	SL6  Spec Items 84-89  Spec Item 99-102  Spec Item 103-104  Schedule of Values  C205,C211,C212,C305,C306,C311  Schedule of Values



33	C306	Supplemental Information				
		Stationing in plan view for MH#7 is incorrect. Stationing shall match profile Sta 103+34				
34	C206	Supplemental Information				
		Keynote #69, Sta 35+24 - Remove piping and back flow assembly. The back flow assembly to be removed is located at an offset of 138.5'L.				
35	C201-C205, C207, C209-C211, C306, APS5, APS8	Supplemental Information				
		Quantiles for pavement, sidewalk, & curb/gutter removal and replacement have been added on the referenced sheets to account for new utility trenching in areas outside of the new pavement and sidewalk sections or within the mill and overlay sections. See attached revised Schedule of Values: Bid Item 7- 14176 SY, Bid Item 8- 6412 SF, Bid Items 14-17 -27375 SY, Bid Item 18 -46916 SF, Bid Item 19 -5944 LF, Bid Item 30 -887LF				
36	Spec Item 107	Supplemental Information				
		See attached revised Schedule of Values, a new Bid Item, 107, has been created to include all material and geotechnical testing required for the project. Material and geotechnical testing fees shall be removed from the individual work bid items and added to Item 107. This includes, but is not limited to Bid Items 10-19, 22-24, 34-50, 52, 78-102.				
37	IFB	Does the bid submittal require a subcontractor list? I was unable to locate where that was listed on the IFB.				
		A subcontractor list is not required with the bid submittal.				
Atta	chments:					
		lues Addendum 1				
		on Item 10 Addendum 1				
		on Item 12 Addendum 1				
		on Item 84-89 Addendum 1				
5. Sp	5. Special Provision item 99-102 Addendum 1					

Offerors are instructed to return a copy of this ad submittal.	denda form signed by an authorized firm agent as part of the
SIGNATURE	
COMPANY	DATE

# City of Surprise Greenway Road Litchfield Road to Bullard Avenue Schedule of Values-Bid Addendum 1, December 21, 2015

BID ITEM	KEYNOTE	ITEM DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL
1		MOBILIZATION / DE-MOBILIZATION	LS	1		
2		AS-BUILTS	LS	1		
3		TRAFFIC CONTROL	LS	1		
4		AZPDES PLAN AND NOTIFICATION	LS	1		
5		CONSTRUCTION STAKING	LS	1		
-	•	Roadway Improvements	0)/	144470		
7	2	SAWCUT, REMOVE AND DISPOSE EXPERING SUPERVALKS AND DAMPS	SY	14,176		
8	<u>4</u> 5	SAWCUT, REMOVE, AND DISPOSE EXISTING SIDEWALKS AND RAMPS MILL AND OVERLAY EXISTING ASPHALT (2" THICK)	SF SY	6,412 14,682		
10	6	GRADING CUT	CY	33,558		
10	6	GRADING FILL	CY	4,819		
11	7	STORM DRAIN INLET MARKER PER COS STD. DET. 50-1	EA	7		
13	9	RETENTION BASIN BERM	EA	11		
14	10, 31	ASPHALT CONCRETE PAVEMENT 2" TYPE D (1/2)	SY	27,375		
15	10, 31	ASPHALT CONCRETE PAVEMENT 3" TYPE C (3/4)	SY	27,375		
16	10, 31	AGGREGATE BASE COURSE, 227MM (9")	SY	27,375		
17	10, 31	SUBGRADE PREPARATION	SY	27,375		
18	11	6' WIDE CONCRETE SIDEWALK, MAG DET. 230	SF	46,916		
19	12, 56	CURB AND GUTTER, MAG DET. 220-1, TYPE 'A'	LF	5,944		
20	13	ADJUST SEWER MANHOLE TO GRADE, MAG DET. 420-1	EA	18		
21	14	ADJUST WATER VALVE TO GRADE, MAG DET. 391-1, TYPE C	EA	51		
22	16	SINGLE CURB, MAG DET. 222, TYPE 'A'	LF SE	8,233		
23 24	17, 29, 35 19	SIDEWALK RAMP CONCRETE SIDEWALK SCUPPER, MAG DET. 206	SF EA	3,917		
25	20	REMOVE AND DISPOSE EX. TREE	LS	1		
26	21	MEDIAN NOSE TRANSITION PER MAG DET. 223	EA	11		
27	22	REMOVE AND REPLACE BRASS CAP	EA	3		
28	23	RIP RAP (D50=4")	CY	2,356		
29	24	REMOVE AND RELOCATE FENCE OUTSIDE OF DRAINAGE EASEMENT	LF	4,745		
30	25, 56	REMOVE AND DISPOSE OF EXISTING CURB AND GUTTER	LF	887		
31	26	REMOVE AND DISPOSE OF EXISTING VERTICAL CURB	LF	291		
33	28	REMOVE AND REPLACE EXISTING LANDSCAPE MATERIAL AND IRRIGATION IN KIND	LS	1		
34	30	CATCH BASIN	EA	1		
46	34	ADJUST UTILITY VAULT BOX AND COVER TO FINISHED GRADE	EA	12		
32A	39	REMOVE AND REPLACE TRAFFIC BOXES PER COS STD. DET. 4-15A	EA	5		
32B	70	REMOVE AND REPLACE TRAFFIC BOXES	EA	3		
- 10		Water				
42	51	CONNECT TO EXISTING WATERLINE OR RECLAIMED WATERLINE	EA LF	11		
43	52	6" D.I.P. WITH POLYWRAP	EA	518 11		
45	54 55	6" GATE VALVE, BOX AND COVER PER MAG DET. 391-1, TYPE C NEW FIRE HYDRANT ASSEMBLY PER COS DET. 6-09	EA	11		
80	58	RELOCATE EXISTING BLOW OFF VALVE IN NEW METER BOX PER COS DET. 6-23	EA	4		
00	30	Sewer	LA			
47	60	12" SDR 35 PVC SEWER LINE	LF	5.087	1	
48	61	8" SDR 35 PVC SEWER LINE	LF	141		
49	62	60" DIA. MANHOLE PER MAG DET. 420, 30" COVER PER COS DET. 7-01	EA	16		
50	63	CONNECT SEWER TO EXISTING MANHOLE	EA	1		
51	64	UTILITY CROSSING	LS	1		
52	66	SEWER MAIN TERMINATION	EA	3		
		Signing and Striping				
53	80	OBLITERATE EXISTING STRIPING	LF	15,257		
54	81	OBLITERATE EXISTING ROAD MARKINGS	EA	18		
55	82	BIKE LANE MARKING PER COS DET. 4-20B	EA	18		
56	83	LEFT TURN LANE MARKING	EA	19		
57	84	RIGHT TURN LANE MARKING	EA	11		
58	8SW	8" SOLID WHITE LINE, PER COS DET. 4-20A	LF	10,347		
60	4BW40	4" BROKEN WHITE LINE (10' SEGMENT AND 30' GAP) WITH TYPE "G" RPM AT 40'	LF	12,149		
		SPACING, PER COS DET. 4-20A  4" DOUBLE YELLOW LINE. ONE LINE SOLID, ONE LINE BROKEN (10' SEGMENT AND 30'		+		
61	4SBYM	GAP) WITH TYPE "D" RPM AT 40' SPACING PER COS DET. 4-19	LF	1,012		
62	4DY40	4" DOUBLE YELLOW LINE WITH TYPE "D" RPM AT 40' SPACING PER COS DET. 4-19	LF	1,229		
		8" SOLID WHITE LINE WITH TYPE "G" RPM AT 20' SPACING PER COS DET. 4-19 & 420A &				
63	8SW20	G	LF	3,279		
64	24SW	STOP BAR. 24" SOLID WHITE LINE, PER COS DET. 4-20A	LF	501		
65	12SW	CROSSWALK. 12" SOLID WHITE LINE, PER COS DET. 4-20A	LF	1,413		
66	8DTW	8" BROKEN WHITE LINE WITH 2' SEGMENT AND A 4' GAP, PER COS DET. 4-20A	LF	1,207		
1		"RIGHT ONLY" SIGN (R3-5R) WITH "RIGHT LANE" PLAQUE (R3-5F). POST PER		I		
67	85, 97	COS DET. 4-22.	EA	12		<u> </u>

# City of Surprise Greenway Road Litchfield Road to Bullard Avenue Schedule of Values-Bid Addendum 1, December 21, 2015

BID ITEM	KEYNOTE	ITEM DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL
68	86, 98	"LEFT ONLY" SIGN (R3-5L) WITH "LEFT LANE" PLAQUE (R3-5B). POST PER COS DET. 4- 22.	EA	16		
69	87	"BIKE LANE" SIGN (R3-17). POST PER COS STD. DET. 4-22.	EA	12		
70	88	RELOCATE EXISTING SIGN TO LOCATION SHOWN	EA	16		
71	89	"BEGIN RIGHT TURN LANE, YIELD TO BIKES" SIGN (R4-4). POST PER COS DET. 4-22.	EA	6		
72	90	KEEP RIGHT SIGN (R4-7) WITH WARNING SIGN (OM-3). POST PER COS DET. 4-22.	EA	11		
73	91	"SPEED LIMIT 45 MPH" SIGN (R2-1). POST, COS STD. DET. 4-22.	EA	1		
74	92	PAINT BULL NOSE AND ADD PAVEMENT MARKERS, COS DET. 4-20A	EA	11		
75	93	REMOVE AND DISPOSE EXISTING SIGN	EA	3		
76	96	NEW TYPE 1 OBJECT MARKER	EA	4		
77		STREET LIGHT SONO TUBE	EA	23		
78		STREET LIGHT CONDUIT	LF	5,261		
		Landscaping				
79		1" WATER METER SERVICE	EA	1		
81		PRE - EMERGENT APPLICATION	SF	93,532		
82		SOIL PREPARATION, AMENDMENTS & CONDITIONERS	SF	93,532		
83		18 STATION CONTROLLER W/LOCKING PEDESTAL CABINET, & DECODERS	EA	1		
84		ISOLATION VALVE AND BOX FOR LATERAL LINES	EA	16		
85		1" BRASS MASTER VALVE	EA	1		
86		1" FLOW SENSOR	EA	1		
87		1" MAINLINE GATE VALVE AND BOX	EA	8		
88		1" REMOTE CONTROL VALVE AND ASSEMBLY W/ WYE STRAINER, PRESSURE REGULATOR, AND BOX	EA	16		
89		1/2", SCH 40 PVC IRRIGATION PIPE - PURPLE	LF	3,940		
90		3/4" SCH 40 PVC IRRIGATION PIPE - PURPLE	LF	13,368		
91		1" SCH 40 PVC IRRIGATION PIPE - PURPLE	LF	521		
92		1-1/2" SCH 40 PVC MAINLINE - PURPLE	LF	4,353		
93		METAL LOCATOR TAPE	LF	4,353		
94		4" SCHEDULE 40 PVC IRRIGATION SLEEVE	LF	600		
95		FLUSH CAP AND 7" ROUND BOX	EA	24		
96		WIRE PULL BOX AND 7" ROUND BOX	EA	8		
97		MULTI-PORT EMITTER AND RISER ASSEMBLY W/ BUG CAP	EA	401		
98		1" BACKFLOW PREVENTER ASSEMBLY AND ENCLOSURE	EA	1		
99		SHRUBS 5 GALLON	EA	1,032		
100		SHRUBS 3 GALLON	EA	555		
101		SHRUBS 1 GALLON	EA	654		
102		2" CALIPER TREE	EA	134		
103		3/4" MINUS CINNAMON BROWN DECOMPOSED GRANITE	CY	545 14		
104		1 1/2"-3" PIT RUN ROCK, MADISON GOLD, WHERE MEDIAN NOSES LESS THAN 4' WIDE PLANT ESTABLISHMENT GUARANTEE AND MAINTENANCE TO INCLUDE WEED	TON			
105	22.26.27.20	TREATMENT	MONTH	6		
106	33,36,37,38, 59,67,68,69	MISC. IMPROVEMENTS, OTHER WORK, AND CONFLICTS	LS	1		
107		MATERIAL AND GEOTECHNICAL TESTING  BASE BID ITEM SUBTOTAL (II	LS	1 cluding	itome (35-41\\·	
		DAGE DID ITEM SUBTUTAL (I	reilis (1-107) 6	ciuding	` ''	
				D.4	TAX: SE BID TOTAL:	
				ВΑ	SE BID TOTAL:	
		Additive Bid Alternate - Reclaimed Water				
35	40, 57	16" D.I.P. RECLAIMED WATERLINE	LF	5,310		
36	40, 57	8" D.I.P. RECLAIMED WATERLINE	LF	44		
37	42	16" GATE VALVE, BOX AND COVER PER COS DET. 6-24	EA	13		
38	43	8" GATE VALVE, BOX AND COVER PER COS DET. 6-24	EA	1		
39	47	CONCRETE ENCASEMENT PER MAG DET. 404-3	LF	687		
40	48	COMBINATION AIR/VACUUM RELEASE VALVE PER COS DET. 6-21	EA	2		
41	50	CAP NEW RECLAIMED WATERLINE AND INSTALL BLOW OFF PER COS DET. 6-23	EA	2		
42	51	CONNECT TO EXISTING WATERLINE OR RECLAIMED WATERLINE	EA	1		
	J.	ADDITIVE BID ALTERNATE - RECLAIMED WATERLINE			Items (35-42))	
		ADDITIVE DID ALTERNATE REQUARRED TA			TAX:	
		ADDITIVE BID ALTE	DNATE - DECI	VIMED A		
		ADDITIVE BID ALTE	WALL - KECL	-AINLU V	TAILN TOTAL.	

# City of Surprise Greenway Road Litchfield Road to Bullard Avenue Schedule of Values-Bid Addendum 1, December 21, 2015

BID ITEM	KEYNOTE	ITEM DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL
		Deductive Bid Alternate - Stockpile Soils				
10	6	The Contractor shall provide a deductive bid alternate for stockpiling excess soil spoils within a Temporary Construction Easement (TCE) directly north of the alignment. Excess cut or spoils from the earthwork required for utility trenching and to reach the proposed grades shown on the plans will be stockpiled on the private property directly north of the alignment as directed by the City. The stockpiled soil will be placed in TCE's. The easement locations will be defined by the City. The Contractor shall prepare and submit a grading plan and sediment and erosion control plan for City approval prior to placing spoils within the easements. The grading plan will evenly place the spoils and minimize the height and side slopes of the stockpiled materials. The sediment and erosion plan will include silt fence and the application of an approved chemical dust suppressant that will remain in place following construction at the City's request. No concrete, pavement, or foreign materials will be allowed in the TCE's.	СҮ	28,739		
		Deductive Bid Alternate - Median Nose Pavers				
90,97,100,1 04		The Contractor shall provide a deductive bid alternate for replacing median nose landscaping where nose is less than 4 feet wide. Shrubs, emitters, pvc pipe, and pit run rock shall be replaced with pavers. Header curb and 4" x 8" Holland Stone Antique Terra Cotta by Paverstone (or approved equal) over 95% compacted grade and 3" thick one sack slurry per cubic yard of aggregate base course material with 1" sand leveling course per Detail Sheet LS6. Cut pavers as needed.	LS	1		

BID ADDENDUM NO. 1
SPECIAL PROVISIONS

**REPLACEMENT ITEMS:** 

10, 12, 84-98, & 99-102



City of Surprise Project No. COS - 20815

# **Greenway Road Litchfield Road to Bullard Avenue**

Volume II

PREPARED BY



4747 N 22<sup>nd</sup> Street, Suite 200 Phoenix, AZ 85016

**December 21, 2015** 

# **Table of Contents**

Item 10 – Grading Cut and Fill	. 1
Item 12 – Retention Basin Grading	. 2
Items 84 – 98 Irrigation System Components	. 3
Items 99 – 102 Plant Materials	. 8

# Item 10 – Grading Cut and Fill

<u>Description:</u> Grading Cut and Fill shall conform to Section 205 of the MAG Standard except as modified as follows:

The work under this Item shall consist of earthwork within the right-of-way including excavating, sloping, rounding tops and ends of excavations, providing fill materials, hauling, loading, depositing, conditioning, spreading and compacting the material complete in place and disposal of surplus material.

**Materials:** Materials shall be per MAG Standard Specifications Part 200.

Should import material be necessary, it shall meet the requirements of Section 210 of the MAG Standard Specifications and the Geotechnical Report which may be requested from the City of Surprise.

<u>Construction Requirements:</u> The Contractor shall haul off and dispose of all material described above in accordance with federal, state and local regulations. Prior to final acceptance of the work, the Contractor shall submit a letter to the Contracting Agency stating the location of each disposal site for all excess or unsuitable material and certify that he has obtained the property owner's permission for the disposal of all such material and obtained necessary permits.

All embankments shall be compacted and tested to 95 percent of the ASTM D698 maximum dry density in each lift.

All embankments outside the curb line shall be native soils in which all materials larger the one-inch in diameter has been removed. It cannot contain any non-organic materials such as pavement or concrete remnants. If imported, the material shall conform to MAG Section 210. Clean fill soil is intended for those areas outside the curb line where future landscaping and irrigation will be installed.

#### **Deductive Bid Alternate**

The Contractor shall provide a deductive bid alternate for stockpiling excess soil spoils within a Temporary Construction Easements (TCE) directly north of the alignment. Excess cut or spoils from the earthwork required for utility trenching and to reach the proposed grades shown on the plans will be stockpiled on the private property directly north of the alignment as directed by the City. The stockpiled soil will be placed in TCE's. The easement locations will be defined by the City. The Contractor shall prepare and submit a grading plan and sediment and erosion control plan for City approval prior to placing spoils within the easements. The grading plan will evenly place the spoils and minimize the height and side slopes of the stockpiled materials. The sediment and erosion plan will include silt fence and the application of an approved chemical dust suppressant that will remain in place following construction at the City's request. No concrete, pavement, or foreign materials will be allowed in the TCE's.

<u>Measurement and Payment:</u> Measurement and payment for earth work (including roadway excavation or fill construction) shall be on cubic yard basis, as noted on the plans, and shall include excavating, sloping, rounding tops and ends of excavations, loading, depositing, conditioning, spreading, and compacting the material complete in place and disposal of surplus material. No allowances have been made for shrink or swell of the materials or for utility trench excavation.

Payment will be paid at the unit price bid per cubic yard as indicated on the Schedule of Bid Items, which amount will be considered full compensation for the work complete and in place as indicated above.

During the bid process the Contractor shall verify the earthwork volumes shown on the plans. Should the Contractor's estimates vary from those shown on the plans, his proposal shall account for the more expensive effort. A change order will not be considered for differences in earthwork efforts unless the City changes elevations or grading during construction.

### Item 12 - Retention Basin Grading

<u>Description:</u> Retention Basin Grading shall conform to Section 205 of the MAG Standard except as modified as follows:

The work under this Item shall consist of earthwork from behind the proposed sidewalk to the northern matchup of the proposed detention basin including excavating, sloping, rounding tops and ends of excavations, providing fill materials, hauling, loading, depositing, conditioning, spreading and compacting the material complete in place and disposal of surplus material.

The Contractor's grading fee shall include the costs to regrade existing stock piles at the slope match up or tie-in boundary along the north side of the proposed drainage basin. The Contractor shall provide a 12' buffer between the new basin's top of slope and the toe of the regraded stockpile. The portion of the stock pile moved to provide the buffer will be placed on the existing piles' northern boundary. The side slopes of the regraded stock piles will be placed at a slope of 6:1 and be treated with a chemical dust suppressant approved by the City. The height of the regraded stock pile shall not exceed the pile's original height.

The grading fee shall also include the costs to remove and dispose of any debris and construction materials from the private property to the north of the alignment that conflict with the location of the new basin and its surrounding buffer. These materials may include piping, concrete, asphalt, landscaping trimmings, crushed stone, or other refuse that has been discarded onto the property. All removed materials shall be disposed of in a landfill permitted to receive them. Documentation of the disposal shall be submitted to the City.

Excess cut or spoils from the earthwork required to reach the proposed grades shown on the plans will be stockpiled on the private property directly north of the alignment as directed by the City. The stockpiled soil will be placed in Temporary Construction Easements (TCEs). The easement locations will be defined by the City. The Contractor shall prepare and submit a grading plan and sediment and erosion control plan for City approval prior to placing spoils within the easements. The grading plan will evenly place the spoils and minimize the height and side slopes of the stockpiled materials. The sediment and erosion plan will include silt fence and the application of an approved chemical dust suppressant that will remain in place following construction at the City's request.

<u>Materials:</u> Materials shall be per MAG Standard Specifications Part 200.

Should import material be necessary, it shall meet the requirements of Section 210 of the MAG Standard Specifications and the Geotechnical Report which may be requested from the City of Surprise.

<u>Construction Requirements:</u> The Contractor shall haul off and dispose of all described material described above in accordance with federal, state and local regulations.

All embankments within and south of the proposed retention basin shall be compacted and tested to 95 percent of the ASTM D698 maximum dry density in each lift.

All embankments shall be native soils in which all materials larger the one-inch in diameter has been removed. It cannot contain any non-organic materials such as pavement or concrete remnants. If imported, the material shall conform to MAG Section 210. Clean fill soil is intended for those areas outside the curb line where future landscaping and irrigation will be installed.

# **Deductive Bid Alternate**

The Contractor shall provide a deductive bid alternate for stockpiling excess soil spoils within a Temporary Construction Easement (TCE) directly north of the alignment. The Contractor's deductive bid alternate shall include the costs to regrade existing stock piles at the slope match up or tie-in boundary along the north side of the proposed drainage basin. The Contractor shall provide a 12' buffer between the new basin's top of slope and the toe of the regraded stockpile. The portion of the stock pile moved to provide the buffer will be placed on the existing piles' northern boundary. The side slopes of the regraded stock piles will be placed at a slope of 6:1 and be treated with a chemical dust suppressant approved by the City. The height of the regraded stock pile shall not exceed the pile's original height.

<u>Measurement and Payment:</u> Earth work for retention basin grading has been included in the quantities for Bid Item 10, Grading Cut and Fill. No separate pay item will provided for retention basin grading.

#### Items 84 – 98 Irrigation System Components

#### **Description:**

The irrigation system for the landscape shall consist of the items below and be installed per project plans and details:

- 1" In-line Ball Valve and Box (each)
- 1" Brass Master Valve (each)
- 1" Flow Sensor (each)
- 1" Mainline Gate Valve and 10" Round Box (Purple) (each)
- 1" Remote Control Valve and Assembly w/Wye Strainer, Pressure Regulator, and Box (Purple) (each)
- ½" Sch 40 PVC Mainline (Purple) (LF)
- 3/4" Sch 40 PVC Mainline (Purple) (LF)
- 1" Sch 40 PVC Mainline (Purple) (LF)
- 1 ½" Sch 40 PVC Mainline (Purple) (LF)

Metal Locator Tape (LF)

4" Sch 40 PVC Irrigation Sleeve (each)

Flush Caps and 7" Round Box (Purple) (each)

Wire Pull Box (each)

Multi-Port Port Emitter and Riser Assembly w/ Bug Cap (each) 1" backflow prevention assembly and enclosure (each)

# **Construction Requirements:**

The contractor shall install the irrigation system in accordance with plans, details, and specifications to provide a complete operational system that delivers irrigation to all plant materials on the project. Materials and equipment for the entire system shall be submitted as part of the submittal packet for the project for approval. The contractor shall install materials and equipment which are approved for installation. Testing and review of materials and equipment shall be conducted throughout construction. Materials and equipment not operating properly shall be replaced for approval by the owner's representative.

<u>Materials</u>: Conform to Section 440 and 757 of the MAG Standard Specifications, except as modified herein.

**Section 440.3 Materials:** of the Standard Specifications is modified to add:

#### General Piping:

Pressure Supply Line (from point of connection through backflow prevention unit): Type K, hard tempered Copper.

Pressure Supply Lines (downstream of backflow prevention units): Schedule 40 PVC.

All Lateral Piping: As shown on plans and colored purple.

Emitter Tubing: Per Detail – Not to exceed 5' in length.

# Copper Pipe and Fittings:

Copper Pipe: Type K, hard tempered.

Fittings: Wrought copper, solder joint type.

Joints: Soldered with solder, 45% silver, 15% copper, 15% zinc and 24% cadmium and solids at

1125° F and liquids at 1145° F.

#### **Brass Pipe and Fittings:**

Brass Pipe: 85% red brass, ANSI Schedule 40 screwed pipe.

Fittings: Medium brass, screwed 125-pound class.

#### Plastic Pipe and Fittings:

Identify all pipes with the following indelible markings such as Manufacture's name, nominal pipe size, Schedule of class, Pressure Rating (PSI), NSF (National Sanitation Foundation) seal of approval, and Date of Extrusion.

Solvent Weld Pipe: Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM DI784; cell classification 12454-B, Type 1, Grade

Pipe shall be purple.

Fittings: Standard weight, Schedule 80, injection molded PVC; complying with ASTM DI784 and

D2466, cell classification 12454-B.

Threads: Injection molded type (where required).

Tees and ells: Side gated

Threaded Nipples: ASTM D2464, Schedule 80 with molded threads.

Joint Cement and Primer: Type as recommended by manufacturer of pipe and fittings.

### Low Pressure/Volume Systems:

Fittings: Type and make recommended by tubing manufacturer.

Drip Emitter Assembly to include solenoid valve, wye strainer, and pressure regulator as one unit as manufactured and supplied by the manufacturer. Hunter Industries or approved equal.

Emitter: Single and Multiport, by Bowsmith or approved equal. Type, size and placement as shown on drawings.

#### Valve Boxes and Hardware:

For pull boxes for control wiring splices: round boxes manufactured by Carson Industries, or approved equal. All in-ground boxes with shall be colored purple for reclaimed water use in the future.

Valve lids shall have bolt down tops and stainless steel hardware. Provide submittal and proof of stainless steel hardware with submittals and at time of installation.

For valves, wye strainers and pressure regulator assembly, jumbo size rectangular boxes as manufactured by Carson Industries, or approved equal. Only one valve will be approved per box.

For pull boxes for control wiring splices: As manufactured by Carson Industries, or approved equal with stainless steel hardware.

Section 440.5 Trench Excavation and Backfill: of the Standard Specifications is modified to add:

Do not begin backfilling operations until required system tests have been completed.

Provide material and compact to assure flush grades after settlement. Level finish grade at trenches before placement of decomposed granite.

Material not suitable for backfill shall be hauled away. Provide non-toxic and suitable backfill if excavated material is unacceptable or not sufficient to meet backfill, compaction and final grade requirements.

Do not leave trenches open more than 48 hours. Protect excavations in compliance with OSHA regulations.

Compact backfill to 85% maximum density, determined in accordance with ASTM D155-7, utilizing the following methods:

- Mechanical tamping.
- Puddling or ponding and/or jetting is prohibited.

**Section 440.6 Pipe installation:** of the Standard Specifications is modified to add:

PVC Piping: Snake pipe in trench as much as possible to allow for expansion and contraction. Do not install pipe when air temperature is below 40°F. Place manual drain valves or flush caps at low points and dead ends of pressure supply piping to ensure complete drainage of system. When pipe laying is not in progress, or at end of each day, close pipe ends with tight plug or cap.

Solvent Weld PVC Pipe: Lay pipe and make all plastic to plastic joints in accordance with manufacturer's recommendations.

PVC Primer: Specifically formulated for pipe and type of connection, as recommended by pipe manufacturer. Deliver in new and unopened containers. Solvent welds shall be allowed to cure at least 24 hours before testing. Potable water supply shall be used for all testing.

Sleeves: All piping under paving shall be sleeved with minimum 3" schedule 40 sleeve as noted and detailed. Contractor shall up size sleeves if pipe cannot move freely inside sleeves. Do not install couplings and fittings on pipe that runs through sleeves.

Install sleeves and pipe at depth required by local codes. Compact backfill material in 6 inch lifts. Set in place, cap and pressure test all piping under paving, in presence of Owner's Representative prior to backfilling and paving operations.

For pipe fittings up to and including 2 ½", fittings and couplings are slip fitting tapered socket solvent weld type. Tapered socket solvent weld fittings are Schedule 80, or equal to or greater than schedule and pressure rating of plastic pipe being joined.

Size tapered fittings so dry, un-softened taper cannot be inserted more than halfway into socket. Plastic saddles and flange fittings are not permitted.

Section 440.7 Valves, Valve Boxes, and Special Equipment Installation and Section 440.8 Sprinkler Head Installaton and Adjustment of the Standard Specifications are modified to add:

Place BFPU, irrigation equipment and controller with coordination and approval with other trades and with owner.

#### Valve Boxes:

Install one valve box for each type of valve installed as detailed. Valve box extensions are not acceptable except for master valves if needed. Cutting of valve boxes is not allowed. Install pea gravel sump after compaction of all trenches. Place final portion of gravel inside valve box after valve box is backfilled and compacted.

Valve boxes shall be molded non-corrosive plastic, ASTM D638, D-356.

Brand or rout controller letter and station number of lid on each valve box. Letter and number size: 1 inch to 1-1/2 inches. Depth of branding 1/8 inch into valve box lid. Create consistently sized and appearing letters that are clearly readable.

Electric Control Valves: Install at depth below finished grade and box lid, and above pea gravel as shown on drawings and as detailed. When grouped together, allow no more than 12 inches between valve boxes. Install each remote control valve in a separate valve box. Install individual valve box flush with ground and perpendicular (longitudinally) to adjacent curb. Secure approval from Owner for valve box locations and positioning prior to installation. Place clean pea gravel in bottom of each box below valve, a minimum of 2 cubic feet.

Include brick supports, one at each valve box corner.

Provide stainless steel hardware and certification that hardware is stainless steel (i.e. bolts and washers) to secure all lids to boxes.

Drip Valve Assemblies: Install drip valve assembly as detailed with minimum 2 cubic feet of pea gravel in bottom of valve box.

Drip Emitters: Place emitters as detailed. Flag each plant location to direct placement of emitters and provide layout for all plant materials. Use different color flags for trees. Secure owner's acceptance for plant locations prior to completing irrigation system installation. Use multi-port emitters for trees and shrubs. Add single ports as needed to provide irrigation to all installed plant material.

### **Section 440.10 Flushing and Testing:** of the Standard Specifications is modified to add:

Construction Review: The owner's representative shall periodically observe work in progress and the contractor' interpretation of the construction documents and to address questions with regards to the installation.

The contractor shall schedule reviews for irrigation system layout and testing prior to covering work and prior to backfilling around trees. Impromptu reviews by owner or owner's representative may occur at any time during the project. Final review will occur at the completion of the irrigation system installation and As-Built Drawing submittals. The contractor is responsible maintain As-Built Drawings on a daily basis for review by the owner's representative. As-Built drawings shall be provided in hard copy and electronic on a compact disc (CD) prior to project acceptance. CD shall be labeled with client name, project name, number and date.

Flushing: After piping, risers, and valves are in place and connected, before installation of distribution equipment, thoroughly flush piping system from dead end fittings under full head of water pressure. Maintain flushing for ten minutes through furthermost valves. Cap risers after flushing.

Testing: Notify owner representative in advance of all testing. Supply force pump and all other test equipment as needed. Provide certified backflow prevention assembly test results.

After backfilling and installation of all control valves, fill pressure supply line with water and pressurize to 40 PSI over designated static pressure or 120 PSI, whichever is greater, for two hours. All pressure tests shall be done with PITO tube and gauge.

Leakage/Pressure Loss: Test is acceptable if no leakage or loss of pressure is evident during test period. Leakage will be detected and documented by inspection with system in full operation.

Replace defective pipe, fitting, joint, valve or appurtenance. Cement of caulking to seal leaks will not be allowed. Repeat testing until the pipe is approved by the owner's Representative.

Retest system until test pressure can be maintained for duration of tests. Before final acceptance, pressure supply line shall remain under pressure for 48 hours. Record and document time and date for all pressure testing whether or not the owner is able to be present. Photographs of pressure readings are acceptable with a time date stamp. Provide readings to owner as soon as complete via email. Include pressure readings and documentation as part of the close out documents.

Final Acceptance: Upon completion of installation, "fine-tune" entire system by regulating valves, adjusting patterns and break-up arms, and setting pressure reducing vales at proper and similar pressure to provide optimum and efficient coverage. Flush and adjust distribution heads for optimum performance and to prevent overspray onto walks, roadways and buildings. Heads of same type shall be operating at same pressure. Make all adjustments before Final Acceptance, as directed. Arrange for owner's representative's presence 48 hours in advance of walk-through. Show evidence to owner's representative that owner has received all accessories, charts, testing documentation, and equipment as required.

Operate each zone in sequence from controllers, using remotes if available, for owner's representative at time of walk-through to insure correction of all incomplete items. The owner's representative will visually observe operation, water application patterns and leakage. Adjust items deemed not acceptable by owner's representative. Owner's representative will do only one final acceptance walk-through. Set irrigation clock appropriate for season. Provide schedule of clock operation including each station, run time, run duration and frequency of irrigation.

### **Measurement and Payment**

Measurement and payment shall be made at the price bid per unit listed above next to each item irrigation system. Measurement and payment shall include all labor, materials, deliveries, inspections, and equipment to complete the work to install a complete irrigation system.

#### Items 99 – 102 Plant Materials

#### **Description:**

Plant materials shall consist of types and sizes as indicated on the project plans and details:

Shrubs 5 Gallon Shrubs 3 Gallon 2" Caliner Trees (container size per ANA

2" Caliper Trees (container size per ANA Standards)

<u>Description</u>: These items are for furnishing all labor, materials, supplies, equipment, tools and transportation, to perform all operations to complete installation of landscape planting as shown on drawings and as specified. Items of work include but are not limited to:

- ° Procurement of all applicable licenses, permits, and fees.
- Coordinate all work with other contractors.

- Preparation of existing soil in all landscape areas to include tilling, grading for swales, and preparation of soil for addition of amendments and construction of aggregate profile per plans.
- Contractor to perform soils investigation to include agronomy and bioassay tests to verify needed soil amendments and any presence of contaminants and/or soil sterilants to ensure better survival of new plantings. Contractor shall allow sufficient time in the construction schedule to complete the bioassay tests and any subsequent mitigation should it be required. At least one test per median should be conducted; and conducted on the soil that will remain in place for planting. Should any conflicts arise between the soils investigation report and these plans, the project landscape architect shall be contacted for clarification

Import soil mix, amendments, and aggregates, in types and quantities for project that have been certified and tested by an independent, local lab specializing in testing of planter soil mix for horticultural use.

- Provide fertilizers and other backfill materials in original packaging with current labels.
- Application of pre-emergent (2 applications) herbicide per label instructions by
   Certified Pesticide Applicator and in accordance with State Regulations.

Application of weed killer per label instructions by Certified Pesticide Applicator in accordance with State Regulations.

- Installation/application of backfill planting soil mix and amendments per details and specifications.
- Construct aggregate profile per layout and depths on project plans.
- ° Fine grading of all landscape areas.
- Installation of plant materials.
- Apply second application of pre-emergent.

<u>Materials</u>: Conform to Section 430 and 795 of the MAG Standard Specifications, except as modified herein.

# **Construction Requirements:**

The contractor shall install plant materials in accordance with plans, details, and specifications. A plant materials list proposed shall be submitted as part of the submittal packet for the project for approval. The contractor shall install plant materials which have been approved for installation prior to delivery to the site.

The contractor shall locate, tag, and otherwise secure all plant materials at the time of construction award. The list of the plant materials shall include: source, address, and contact name and phone number for each plant type. It is the contractor's responsibility to verify that selected plant materials are available in the size, type, species, variety, and quality to comply with project plans and details.

The contractor shall notify owner's representative when all plants are located so an inspection and tagging can be performed.

Trees, Shrubs, Groundcover, and Accents: Provide trees, shrubs, groundcovers, and accents of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of references. Provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice, and free of disease, fungus, root-

bound condition, insects, eggs, larvae and defects such as knots, sunscald, injuries, abrasions or disfigurement.

Do not prune plants before delivery. Trees with damaged or crooked leaders or multiple leaders (unless specified) will be rejected. Trees with fresh cuts of limbs over ¾" which have not completely calloused will be rejected. Provide copy of delivery ticket for each source for all plant material.

Label each plant with securely attached waterproof tag bearing legible designation of botanical and common name, including variety or cultivar. Delivery tickets and purchase orders verifying quantities of plants planted on this project will be required for payment on plant material items.

Stakes and Wire Ties: Provide stakes of sound new 2" diameter x 10' cedar, redwood or Lodge pole pine, free of knotholes and other defects. Provide wire ties of 2-strand, twisted, pliable zinc coated galvanized iron wire not lighter than 12 gauge. Provide not less than 2" diameter reinforced rubber or plastic hose, cut to required lengths and of uniform color, material and size to protect tree trunks from damage by wires. Place stakes and trim stakes as required avoiding contact with limbs and trunk(s). Do not drive stake through root balls. Place stakes in position and quantity shown on details.

Layout for Plant Materials: Layout plant locations and re-stake if necessary per layout approved with irrigation installation. Secure Owner's Representative acceptance before start of planting. Make minor adjustments to plant locations on site as requested by Owner's Representative.

Setting and Backfilling for Trees, Shrubs and Accents: Set plant material stock plumb and in center of pit with top of ball at elevation necessary to accomplish finished landscape grades as per details. Remove pallets or containers before setting. Cut cans on two sides with a metal cutter or other cutting device; remove bottoms of wooden boxes before setting. Do not use spade to cut cans. Do not handle container plants by foliage, branches or trunks.

After removing plant from container, lightly scarify side of rootball to eliminate root-bound condition.

Do not use nursery stock if ball is cracked or broken before or during planting operation. When set, place additional backfill around base and sides of ball. Work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately two-thirds full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill. Do not set so top of rootball is below top of subgrade.

Include all fertilizing materials and other amendments in backfill mix. Do not apply to top of soil surface. Obtain inspection for procedures and materials as described in 3.02 B.

Remove all nursery plant labels and nursery stakes from plants.

Prune plants only if directed by Owner's Representative.

Stake all trees as shown on details. Set stakes vertical and space to avoid penetrating root balls or root masses. Allow enough slack to avoid rigid restraint of tree.

Begin maintenance of plant material.

# **Measurement and Payment**

Measurement and payment shall be made at the price bid per each for the plant materials at the size per plans. Materials, equipment, labor, including staking and backfill shall be considered incidental with no additional payment made. Measurement and payment shall include all labor, materials, deliveries, inspections, and equipment to complete the work to install plant materials. Refer also to specifications for Plant Establishment, Maintenance and Guarantee Period.